

What is claimed is:

- 2 1. A solar control film comprising:
3 a) an adhesive layer for adhering the solar control film to a
4 substrate;
5 b) a metallized layer; and
6 c) a scratch resistant layer containing dispersed carbon black
7 particles wherein the metallized layer is between the adhesive layer for adhering to a
8 substrate and the scratch resistant layer.
9
10 2. The solar control film of claim 1 wherein the adhesive layer comprises a
11 pressure sensitive adhesive.
12
13 3. The solar control film of claim 1 wherein the adhesive layer comprises a
14 dry adhesive.
15
16 4. The solar control film of claim 1 wherein a releasable liner is present on
17 the adhesive layer.
18
19 5. The solar control film of claim 1 wherein the metallized layer is
20 comprised of aluminum deposited on a polymeric substrate.

1 6. The solar control film of claim 5 wherein the polymeric substrate
2 comprises polyethylene terephthalate.

3
4 7. The solar control film of claim 1 wherein the scratch resistant layer
5 comprises from about 1 to about 10% by weight of the carbon black particles.

6
7 8. The solar control film of claim 1 wherein the scratch resistant coating
8 comprises from about 2 to about 3% by weight of the carbon black particles.

9 9. The solar control film of claim 1 wherein the carbon black particles have
10 an average particle size in the range of from about 0.2 to about 5.0 microns.

11 10. The solar control film of claim 1 wherein the carbon black particles have
12 an average particle size in the range of from about 0.2 to about 0.5 microns.

13
14 11. The solar control film of claim 1 wherein the scratch resistant layer
15 comprises an acrylic resin.

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17 12. The solar control film of claim 11 wherein the acrylic resin is prepared
18 from a mixture of pentaerythritol triacrylate ester and pentaerythritol tetraacrylate
19
20 ester.

1 13. The solar control film of claim 1 wherein the acrylic resin is prepared
2 from pentaerythritol tetraacrylate ester, pentaerythritol triacrylate ester and an acrylated
3 epoxy compound.

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5 14. The solar control film of claim 1 wherein the scratch resistant layer has a
6 thickness in the range of from about 0.5 to about 3.0 microns.

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8 15. The solar control film of claim 1 wherein the scratch resistant layer has a
9 thickness in the range of from about 0.8 to about 1.8 microns.

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11 16. The solar control film of claim 1 wherein the solar control film has a
12 visible light transmittance of from about 10% to about 80% and a visible light
13 reflection of from about 0% to about 8%

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15 17. The solar control film of claim 1 wherein the solar control film has a
16 haze of less than about 7%.

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18 18. The solar control film of claim 1 further comprising a polymeric film
19 between the adhesive layer and the metallized layer.

- 1 19. The solar control film of claim 18 wherein the polymeric film is
2 composed of polyethylene ethylene terephthalate.
- 3
- 4 20. The solar control film of claim 19 wherein the polymeric film includes
5 an ultraviolet absorbent.
- 6
- 7 21. The solar control film of claim 18 comprising a plurality of metallized
8 layers.
- 9
- 10 22. The solar control film of claim 21 wherein a polymeric film is located
11 between adjacent metallized layers.
- 12
- 13 23. A process for preparing a solar control film comprising mixing a
14 composition comprised of carbon black in particulate form dispersed in a nitrocellulose
15 resin with a polymer forming material to form a coating composition and applying the
16 coating composition to a component of a solar control film comprised of an adhesive
17 layer for adhering the solar control film to a substrate and a metallized layer whereby
18 the coating composition forms a scratch resistant layer containing dispersed carbon
19 black particles.
- 20
- 21 24. The process of claim 23 wherein the pigment is carbon black.

1 25. The process of claim 23 wherein the polymer forming material is a
2 mixture of pentaerythritol acrylate ester and acrylated epoxy compound.
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5 26. The process of claim 25 wherein the pentaerythritol acrylate ester
6 comprises a mixture of pentaerythritol triacrylate ester and pentaerythritol tetraacrylate
ester.
7
8 27. The process of claim 23 wherein the composition comprised of a
9 pigment in particulate form dispersed in a nitrocellulose resin is mixed with the
10 polymer forming material in an amount of from about 35 to about 50% by weight of
11 the polymer forming material.
12
13 28. The process of claim 23 wherein the composition comprised of a
14 pigment in particulate form dispersed in a nitrocellulose resin is mixed with the
15 polymer forming material in an amount of from about 35 to about 45% by weight of
16 the polymer forming material.
17
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19 29. The process of claim 23 wherein the carbon black dispersed in a
20 nitrocellulose resin is first mixed with a portion of materials forming an acrylic resin
21 and the resulting mixture is combined with a separate mixture containing a remaining
portion of materials forming the acrylic resin.

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